

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,120,685 B2  
APPLICATION NO. : 09/891584  
DATED : October 10, 2006  
INVENTOR(S) : Ullmann et al.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Delete the title page and substitute therefore the attached title page.

Figures 1-8 are replaced by the attached 9 Sheets with Replacement Drawings.

PLEASE  
SCAN  
NEW  
TITLE  
PAGE

(Page  
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*Not*  
This certificate supersedes the <sup>Certificates</sup> [REDACTED] of Correction issued May 5, 2009, and

May 26, 2009.

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]



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(12) **United States Patent**  
**Ullmann et al.**

(10) Patent No.: **US 7,120,685 B2**  
(45) Date of Patent: **Oct. 10, 2006**

(54) **METHOD AND APPARATUS FOR DYNAMIC CONFIGURABLE LOGGING OF ACTIVITIES IN A DISTRIBUTED COMPUTING SYSTEM**

(75) Inventors: Lorin Evan Ullmann, Austin, TX (US); Rajeeta Lalji Shah, Austin, TX (US)

(73) Assignee: International Business Machines Corporation, Armonk, NY (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 750 days.

(21) Appl. No.: 09/891,584

(22) Filed: Jun. 26, 2001

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(51) Int. Cl.  
**G06F 15/173** (2006.01)

(52) U.S. CL. .... 709/224; 710/18

(58) Field of Classification Search .... 709/224,  
709/204, 223; 714/48, 45; 719/318; 707/10,  
707/200; 710/8; 377/26

See application file for complete search history.

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\* cited by examiner

Primary Examiner—John Follansbee

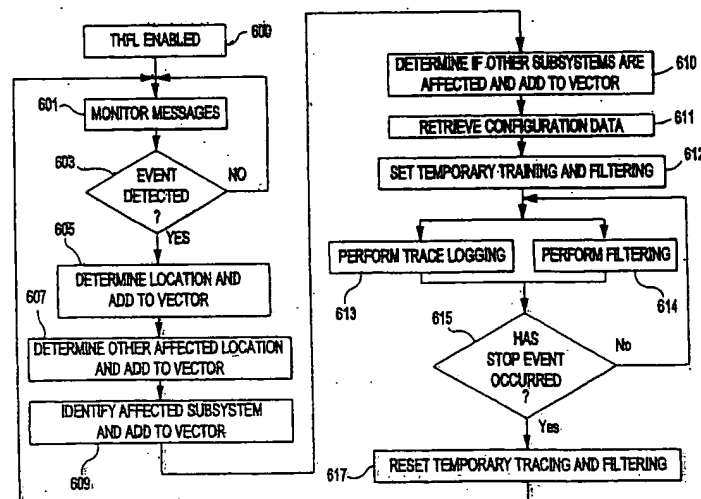
Assistant Examiner—Dustin Nguyen

(74) Attorney, Agent, or Firm—Jeffrey S. LaBaw; Anne Vachon Dougherty

(57) **ABSTRACT**

A system and method for implementing tracking of computing system activities wherein the tracking can be dynamically adjusted. The system provides a multiple level logging system having a first level for detecting message level errors and a second trace level for obtaining trace information and for filtering same to provide more details to be used for implementing corrective action. A set of filters is provide to further refine the data which is provided to a user/system administrator. The system also provides for selective activation of tracking and logging for selected subsystems, as well as the ability to vary the frequency at which the tracking is performed. The frequency of logging can be adjusted upward in response to detection of an error and can then be decreased, or the tracking selectively disabled or entirely stopped upon detection of a stop event.

22 Claims, 9 Drawing Sheets



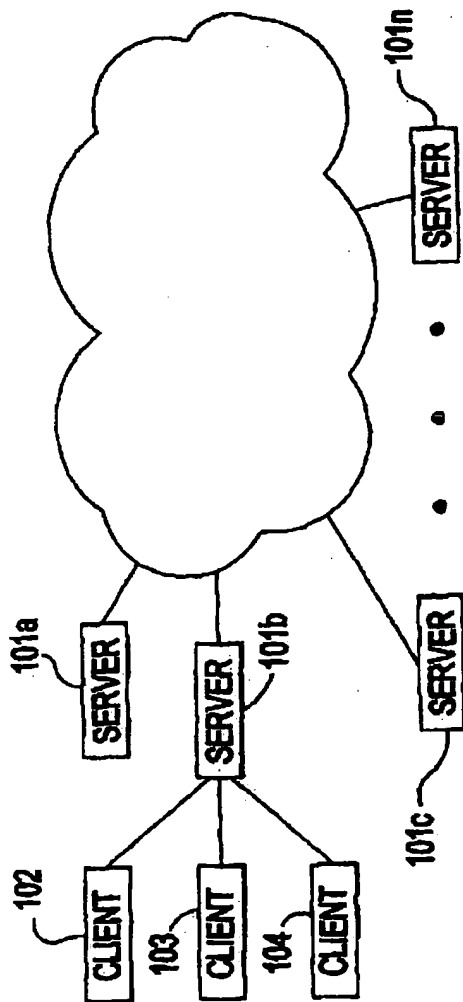


FIG. 1

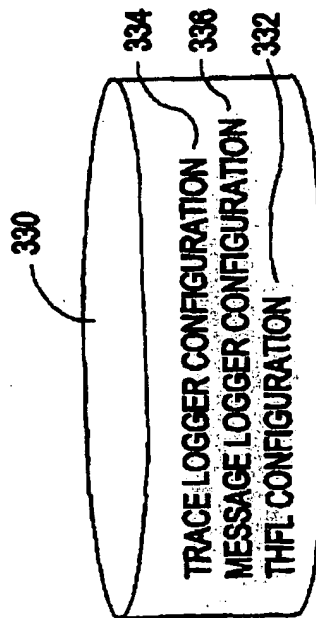
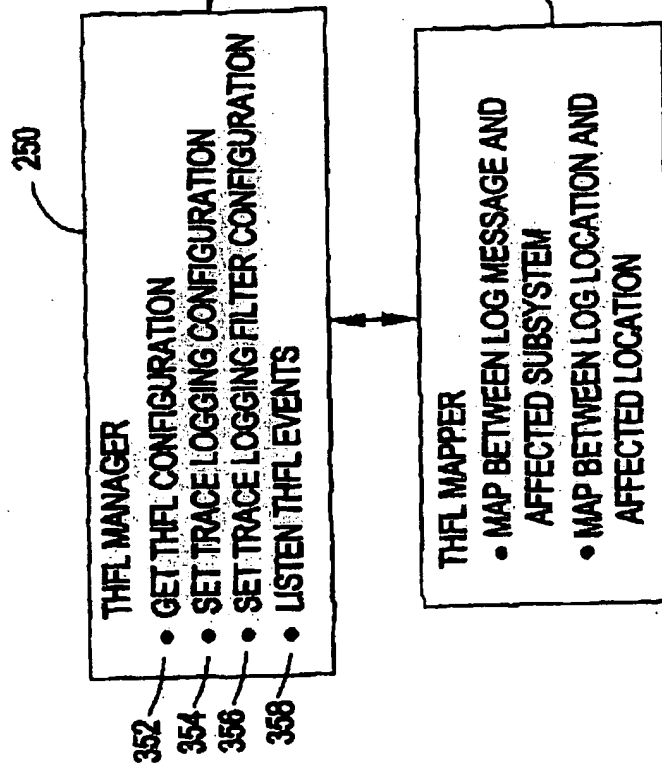


FIG. 3



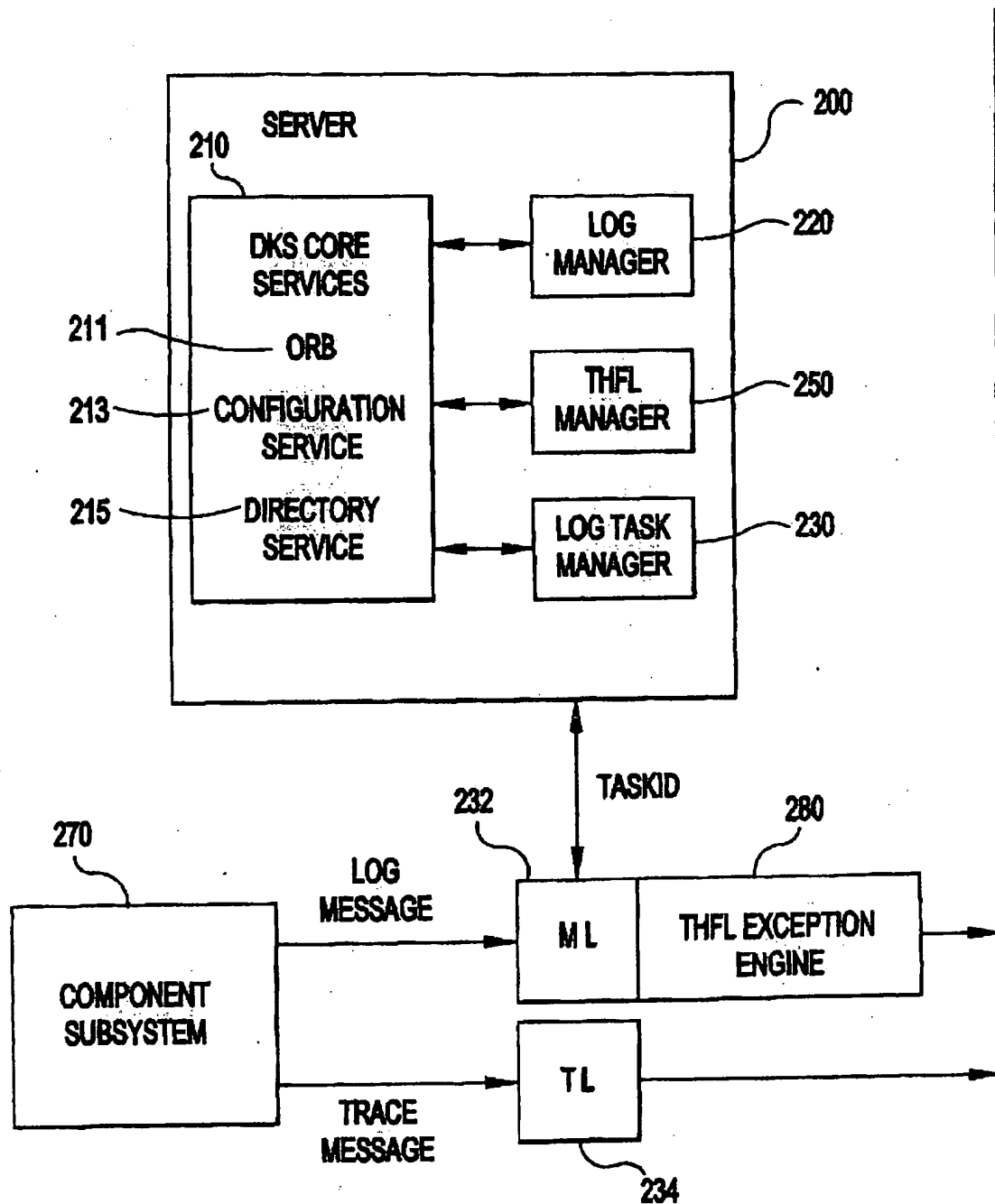


FIG.2A

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FIG.2

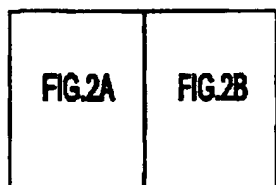
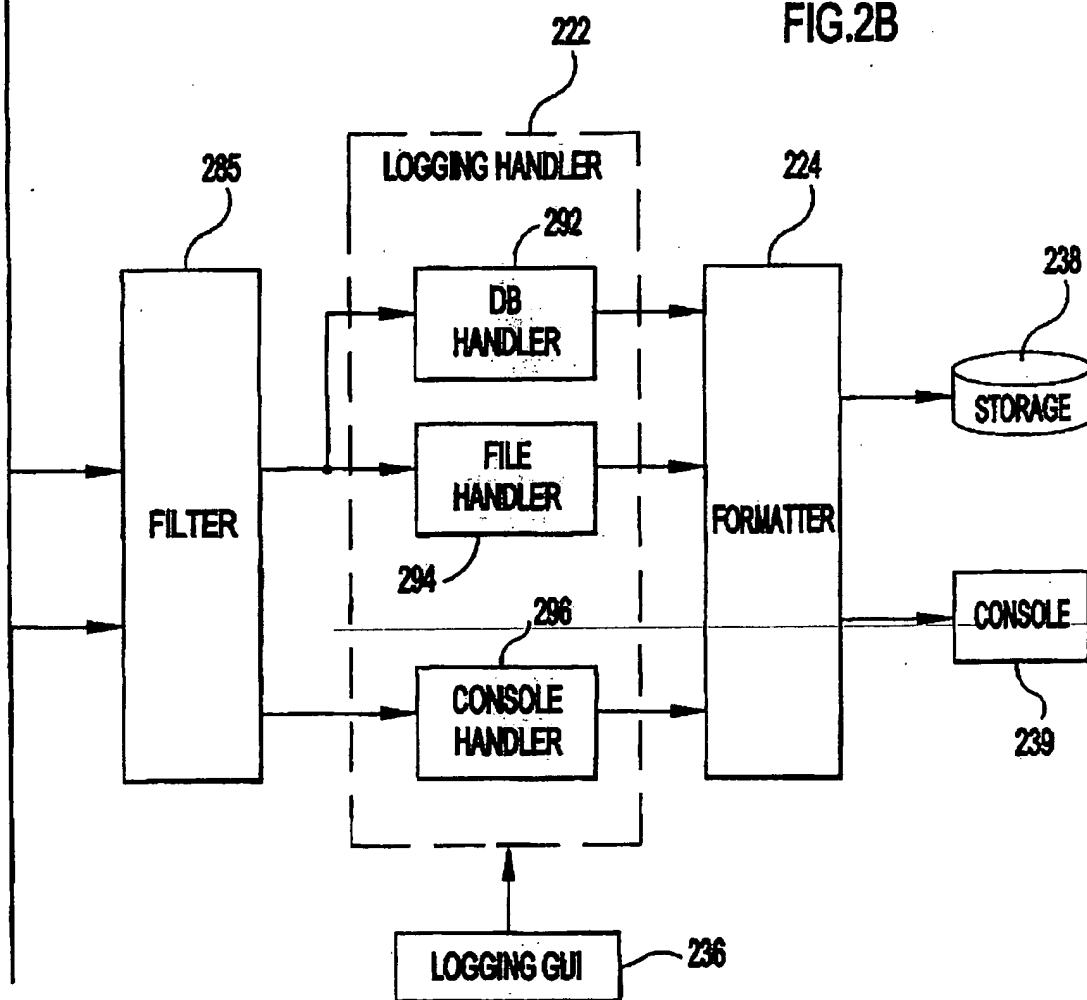


FIG.2B



✓ Transient High Frequency Logging Configuration GUI

When to Enable Transient High Frequency Logging:

☒ Run Periodic Detection

- Daily                      time of day = \_\_\_\_
- Monthly                      day of month = \_\_\_\_
- Continuous                      Polling interval every \_\_\_\_ minutes

☒ Enable immediately as response to ALL Error Message (very expensive from a performance standpoint)

☒ Select Subsystem(s) which error events turn on temporary tracing

Subsystem DropDown:    Directory  
    IP Driver  
    ORB  
    Etc.

Duration of Transient High Frequency Logging:

- ☒ (default) 1 hour after error message
- ☒ Indefinite until Administrator turns off tracing

FIG.4

FIG.5A

View Subsystems Performing Transient High Frequency Trace Logging

Current List

Drop down List of Subsystems

Directory

IP Driver

ServiceManager

ORB

List in Last \_\_\_\_ hours

Drop down List of Subsystems

List in Last \_\_\_\_ days

Drop down List of Subsystems

FIG. 5B

Details Views For Each Subsystem

View ErrorMessage that Initiated Increase Logging frequency:

2001.05.16 07:17:41.139 FNGDR3012E The Messaging Service for the directory running on the local ORB was unable to subscribe to event messages. No directory events can be processed by the ORB.

High Frequency Logging Interval 2001.05.16 07:17:41.139 - 2001.05.16 07:17:41.139

View MessageLog Button

View TraceLog Button

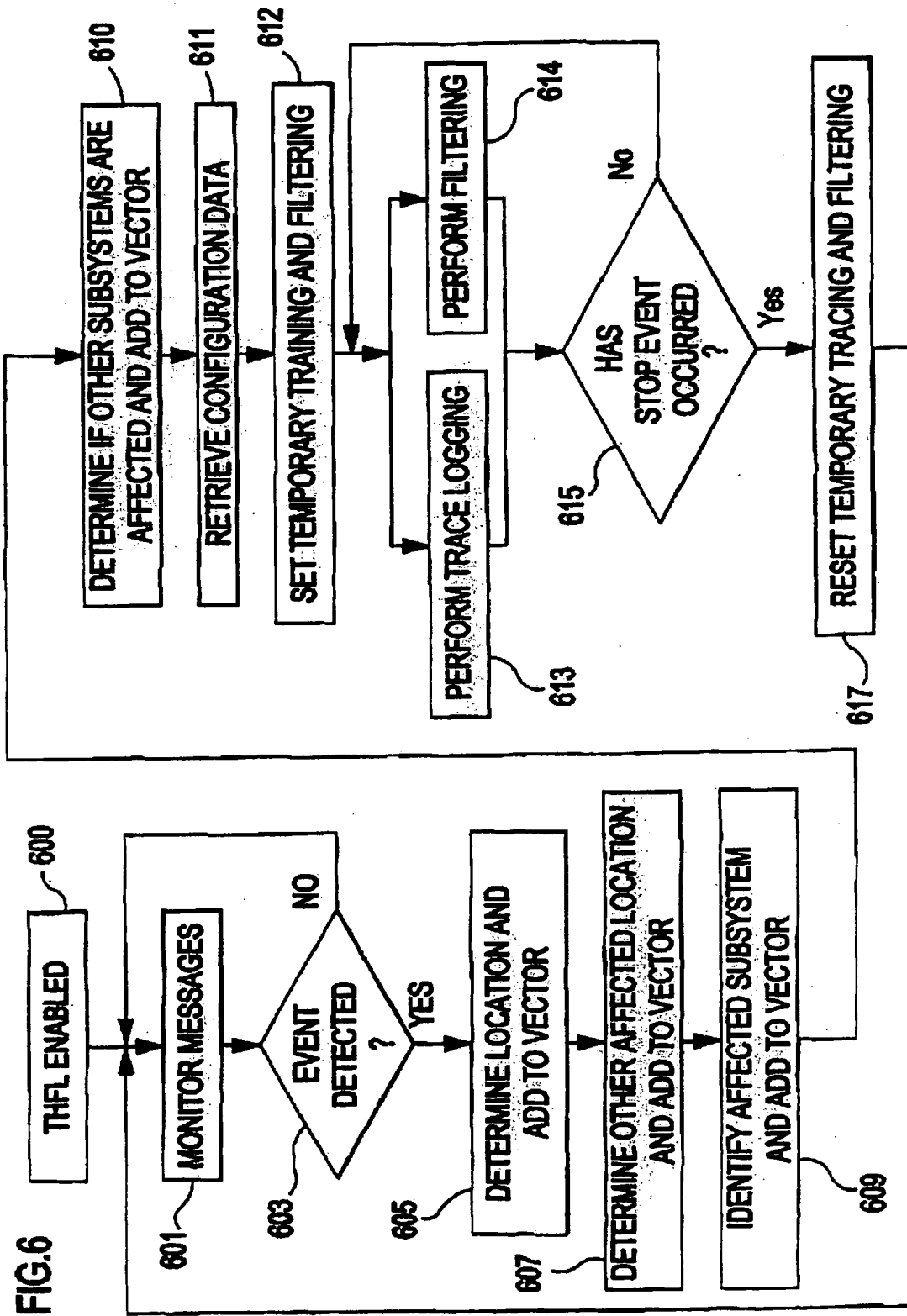
View CombinedTimeBoundLog Button

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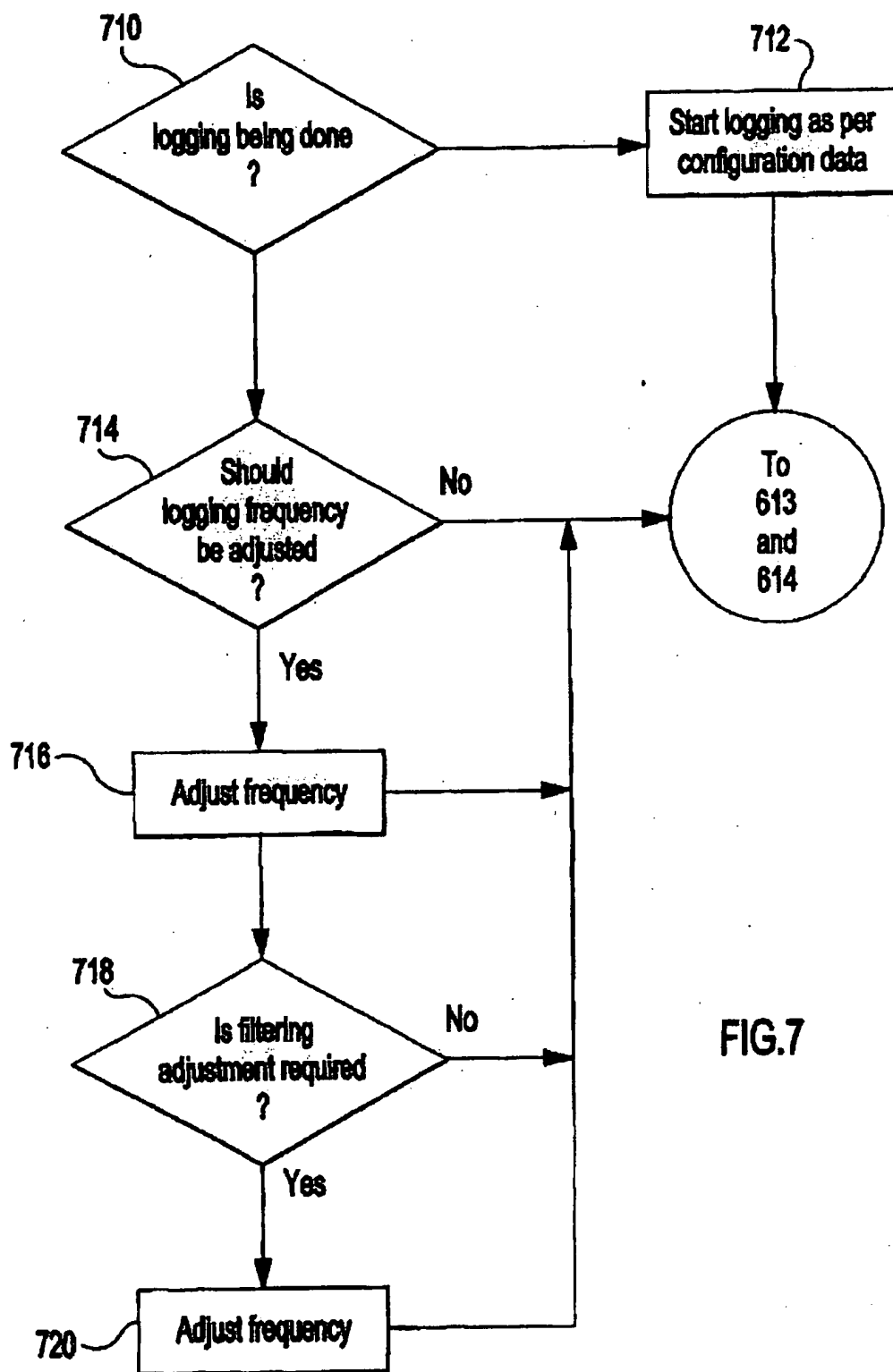


FIG. 7

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